

## Geometry 7-2 Study Guide: Similarity and Transformations

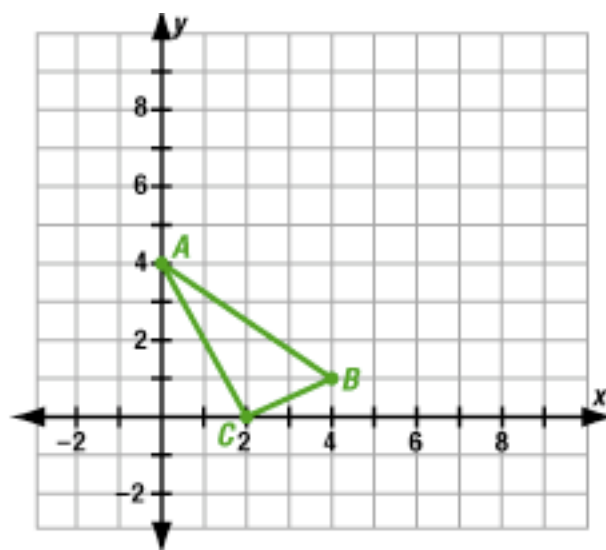
**For problems 1-4, watch video example 1.**

1. What is a similarity transformation?

2. In a similarity transformation, what makes a dilation an reduction vs an enlargement?

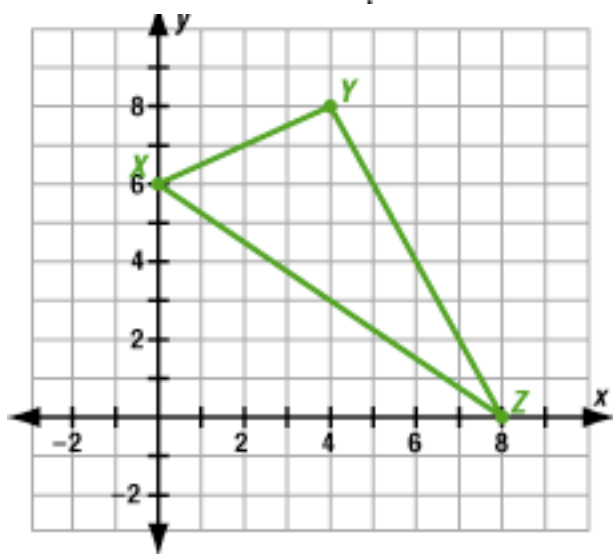
3.

$$D: (x, y) \rightarrow (2x, 2y)$$
$$A(0, 4), B(4, 1), C(2, 0)$$



4.

$$D: (x, y) \rightarrow \left(\frac{1}{2}x, \frac{1}{2}y\right)$$
$$X(0, 6), Y(4, 8), Z(8, 0)$$



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**5. Guided Practice:** Apply the dilation D to the polygon with the given vertices. Name the coordinates of the image points. Identify and describe the transformation.

$$D: (x, y) \rightarrow \left(\frac{3}{4}x, \frac{3}{4}y\right)$$

$A(4, 8), B(-8, 4), C(8, -4)$

Refer to example 2 on page 2 of your textbook.

**Guided Practice. Determine whether the polygons with the given vertices are similar. Support your answer by describing a transformation.**

6.

$W(-4, 2), X(-4, 6), Y(6, 2), Z(6, 6)$   
 $D(-2, 1), E(-8, 12), F(3, 1), G(3, 3)$

7.

$L(-10, 5), M(-5, 0), N(0, 0), O(5, 5)$   
 $D(4, 2), E(2, 0), F(0, 0), G(-2, 2)$

**Complete questions 8-10 by watching video example 3.**

8. Are all circles similar? Explain why or why not.

9. What are the two steps to proving triangles similar?

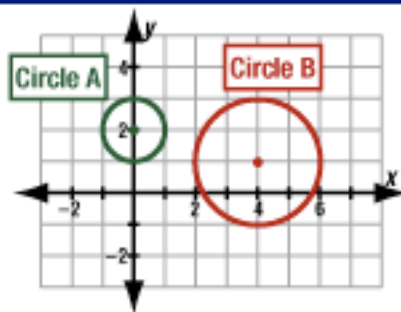
1.

2.

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10.

Prove that circle A with center  $(0, 2)$  and radius 1 is similar to circle B with center  $(4, 1)$  and radius 2.



**11. Guided Practice:** Prove that circle A with center  $(6, -9)$  and radius 4 is similar to circle B with center  $(3, -8)$  and radius 5.

Refer to example 4 on page 475.

**12.** Hector is making an art project by cutting and gluing shapes to a wooden board. His design includes two similar triangles, with one 4 times the size of the other. He cuts and traces the small triangle first onto grid paper. Describe how he can use the tracing to make a pattern for the large fabric triangle.